TDH Human Health Risk Assessment

Health Consultation

Residential Indoor Air Investigation

EGYPTIAN LACQUER MANUFACTURING COMPANY, INC.

FRANKLIN, WILLIAMSON COUNTY, TENNESSEE

Prepared by the
Tennessee Department of Health

NOVEMBER 22, 2010

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

CONCLUSIONS EEP reached three important conclusions in this health consultation:

Conclusion 1

EEP concludes that the concentrations of the site-related chemicals, acetone, benzene, and toluene, measured in the indoor air of Home A on Daniels Drive, in January 2010 were greater than the outdoor background air sample collected in the backyard of Home B. Home A is located next to Home B. These levels detected are below levels that are considered harmful to adults or children living in the home.

Basis for Conclusion

Acetone, benzene, and toluene measurements in the indoor air of Home A were well below the levels considered by both ATSDR and EPA to be harmful to the health of adults and children. The amount of benzene measured in the indoor air was within the risk range of one excess cancer in 10,000 to 100,000 people used by EPA. There is some added risk associated with some exposure to these chemicals. However, the risk is considered low. The higher benzene concentration in the home could be due to storing gasoline and gasoline-powered lawn equipment in the basement / garage.

Next Steps

TDEC communicated all results to the homeowners and stated that the lawn equipment and gasoline containers should be removed from the basement / garage storage area. A benefit of this would be to decrease the amount of chemical vapors that could be present in the home from the equipment.

Conclusion 2

EEP concludes that the concentrations of the site-related chemicals, acetone, benzene, and toluene, measured in the indoor air of Home B on Daniels Drive in January 2010 were similar to concentrations measured in the outdoor background air sample collected in the backyard of Home B. These levels are below levels that are considered harmful to adults living in the home. No children are living in Home B.

Basis for Conclusion

All measurements of the acetone, benzene, and toluene in indoor air were similar to levels measured in the outside background air sample collected at this home. The amount of benzene measured in the indoor air was at the one excess cancer in 100,000 people risk level. There is some added risk associated with exposure to benzene at this amount. However, this added risk is considered to be low.

Next Steps

TDEC communicated all results to the homeowners. TDEC continues to work with ELMCO to clean up the site and prevent further migration of chemicals to Liberty Creek.

Conclusion 3

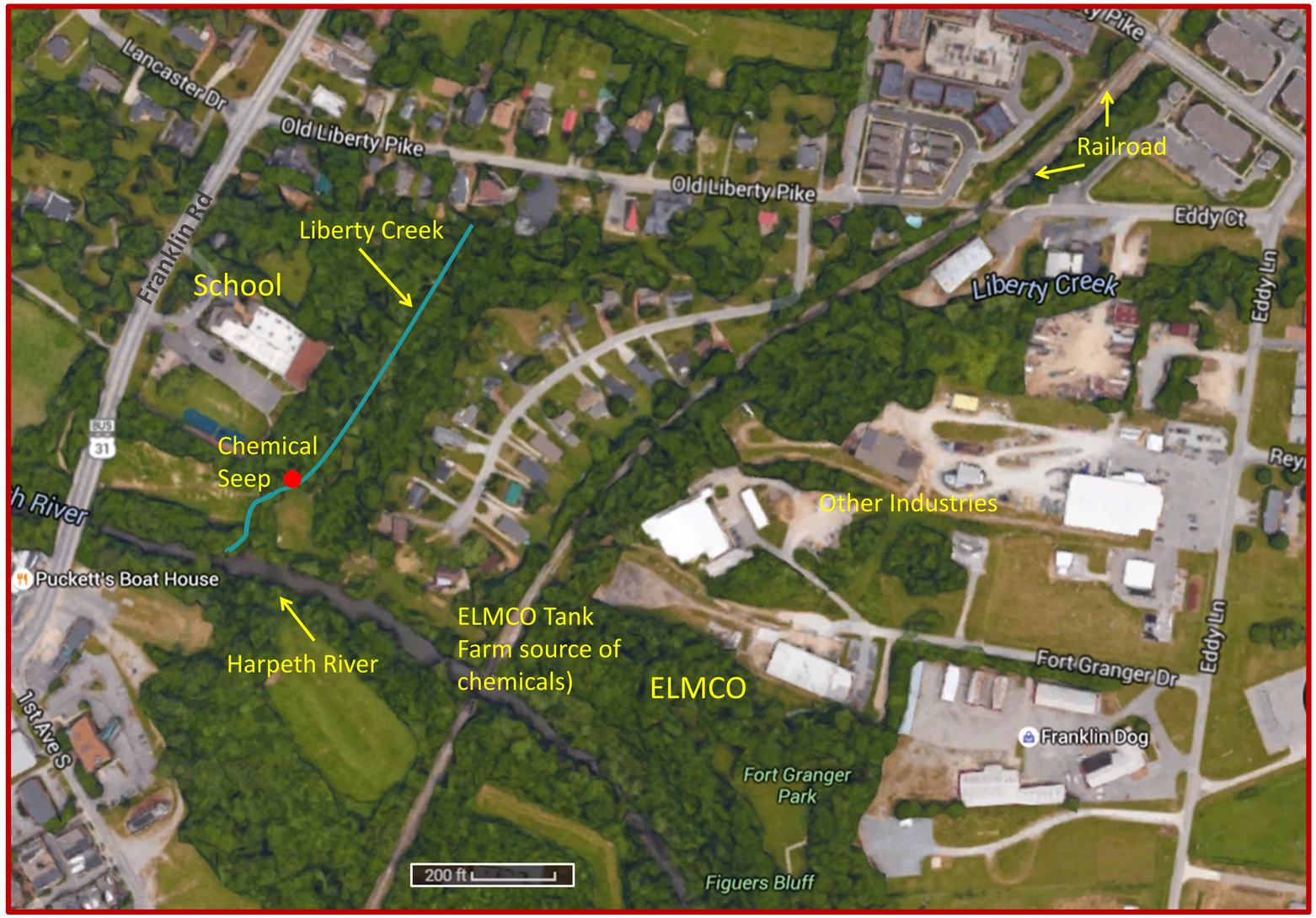
EEP concludes that the concentrations of site-related chemicals acetone, benzene, and toluene, measured in the indoor air of Home C on Daniels Drive in January 2010 were of similar concentration to the outdoor background air sample collected in the backyard of Home B. These levels are below the levels that are considered harmful to adults and children living in the home.

Basis for Conclusion

All measurements of the acetone, benzene, and toluene in indoor air were similar to concentrations measured in the outdoor background air sample collected in the backyard of Home B. The amount of benzene measured in the indoor air was at the one excess cancer in 100,000 people risk level. There is some added risk associated with some exposure to benzene at this amount. However, this added risk is considered to be low.

Next Steps

TDEC communicated all results to the homeowners. TDEC continues to work with ELMCO to clean up the site and prevent further migration of chemicals to Liberty Creek.



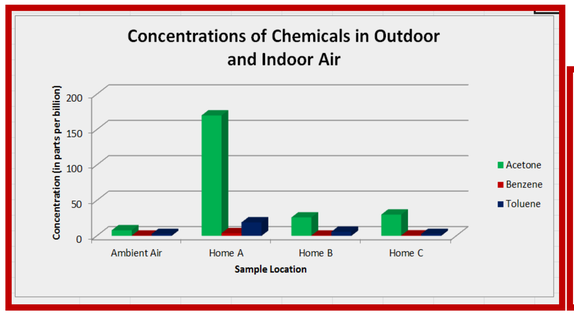


TABLE 1. Indoor air sampling results for 3 homes on Daniels Drive in Franklin, Williamson County, Tennessee. Samples were collected on January 19-20, 2010, over an approximate 24-hour time period with Summa canisters. Values are reported in parts per billion (ppb). Results compared to health comparison values for chronic exposure duration of greater than 365 days. Comparisons were made using ATSDR's EMEGs for non-cancer effects and to ATSDR's CREGs and EPA's RSLs for cancer effects.

Chemical / Sampling Data and Location	Outdoor Air (outside of Home B)	Indoor Air Home A	Indoor Air Home B	Indoor Air Home C	ATSDR Chronic EMEG (non-cancer hazard)	ATSDR CREG (10^{-6} excess cancer risk)	ATSDR CREG (10^{-4} excess cancer risk)	EPA RSL (10^{-6} excess cancer risk)	EPA RSL (10^{-4} excess cancer risk)
acetone	7.9	230 E / 170 D	26	30	10,000	nc	nc	nc	nc
benzene	0.3	3.8	0.41	0.51	3	0.04	4	0.1	10
toluene	2.7 B	19 B	5.8 B	2.7 B	80	nc	nc	nc	nc

TN Department of Health